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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/723,116	11/26/2003	Jesse D. Wolfe	IL-11162	1306
7590	02/25/2005		EXAMINER	
Michael C. Staggs Lawrence Livermore National Laboratory P. O. Box 808, L-703 Livermore, CA 94551			ASSAF, FAYEZ G	
			ART UNIT	PAPER NUMBER
			2872	

DATE MAILED: 02/25/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

CT

<b>Office Action Summary</b>	Application No. 10/723,116	Applicant(s) WOLFE ET AL.	
	Examiner Fayez G. Assaf	Art Unit 2872	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-29 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-7 and 9-29 is/are rejected.
- 7) ☒ Claim(s) 8 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>11/26/2003</u> . | 6) <input type="checkbox"/> Other: ____.  |

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**DETAILED ACTION**

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-4 are rejected under 35 U.S.C. 102(b) as being anticipated by Boswell et al. (US 2002/00036335).

Regarding claims 1 and 2, Boswell discloses an optical element, comprising: a sinusoidal profile substrate (30 of Fig. 2), an adhesion layer, having a predetermined thickness deposited on said profile (20 of Fig. 2), a layer comprising silver, having a predetermined thickness deposited on said adhesion layer (18 of Fig. 2); and a passivation layer, having a predetermined thickness deposited on said silver layer (16 of Fig. 2).

It is noted that the method of deposition is not germane to the issue of patentability of the device itself. Therefore, the method has not been given patentable weight.

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Regarding claim 3, Boswell discloses the silver layer comprising a thickness in the range from about 1000 to about 10,000 Angstroms (paragraph [0021]).

Regarding claim 4, Boswell discloses the adhesion layer comprising a thickness in the range from about 3 to about 300 angstroms (paragraph [0022]).

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 5-7 and 9-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Boswell.

Boswell discloses the claimed invention except for the following:

The passivation layer comprising a thickness in the range from about 3 to about 10 angstroms.

The adhesion layer comprising at least one material selected from the group consisting of: nickel, nickel nitride,

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chromium, chromium nitride, nickel-chromium alloys, silicon-nitride, and nickel-chromium nitride.

The passivation layer comprising at least material selected from the group consisting of: nickel, nickel nitride, chromium, chromium nitride, nickel-chromium alloys, silicon-nitride, and nickel-chromium nitride.

The durability layer comprising at least one nitride selected from the group consisting of: silicon nitride, aluminum nitride, and silicon aluminum nitride.

The durability layer further comprising an oxinitride layer deposited on said nitride layer and further metal oxides, a plurality of metal oxides.

However, the selection of known materials based on their suitability for the intended use or the determination of the optimum or workable ranges does not serve as basis for patentability.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to select such materials for the passivation or the durability layer, since it has been held to be within the ordinary skill of worker in the art to select a known material on the basis of its suitability for the intended use. *Sinclair & Carroll Co. v. Interchemical Corp.*, 325 U.S. 327, 65 USPQ 297 (1945).

One would have been motivated to select such materials because of their desired optical response (transmittance, energy absorption ...etc) in the predetermined range of wavelengths.

Furthermore, It has been held that the determination of the optimum or workable ranges of said variable might be characterized as routine experimentation. In re Antonie, 559 F.2d 618, 195 USPQ 6 (CCPA 1977) See also In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

One would have been motivated to provide such values so as to maximize diffraction efficiency.

Regarding claim 14, Boswell discloses at least one durability layer on the passivation layer (14 of Fig. 2).

Regarding claims 23-29, it would have been obvious, at the time the invention was made to one of ordinary skill in the art to design such method steps to form the multi-layer film.

#### ***Allowable Subject Matter***

Claim 8 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claim 8 is allowable over the prior art for at least the reason that the prior art fails to teach or reasonably suggest

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the diffraction efficiency being greater than about 90% for the predetermined range as set forth in the claimed combination.

### **Conclusion**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Fayez G. Assaf whose telephone number is (571) 272-2307. The examiner can normally be reached on 8-5 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Drew Dunn can be reached on (571) 272-2312. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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A handwritten signature in black ink, appearing to read "Faye G. Assaf". The signature is stylized with a large, looped 'F' and a trailing flourish.

Faye G. Assaf

Primary Examiner

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2/22/05